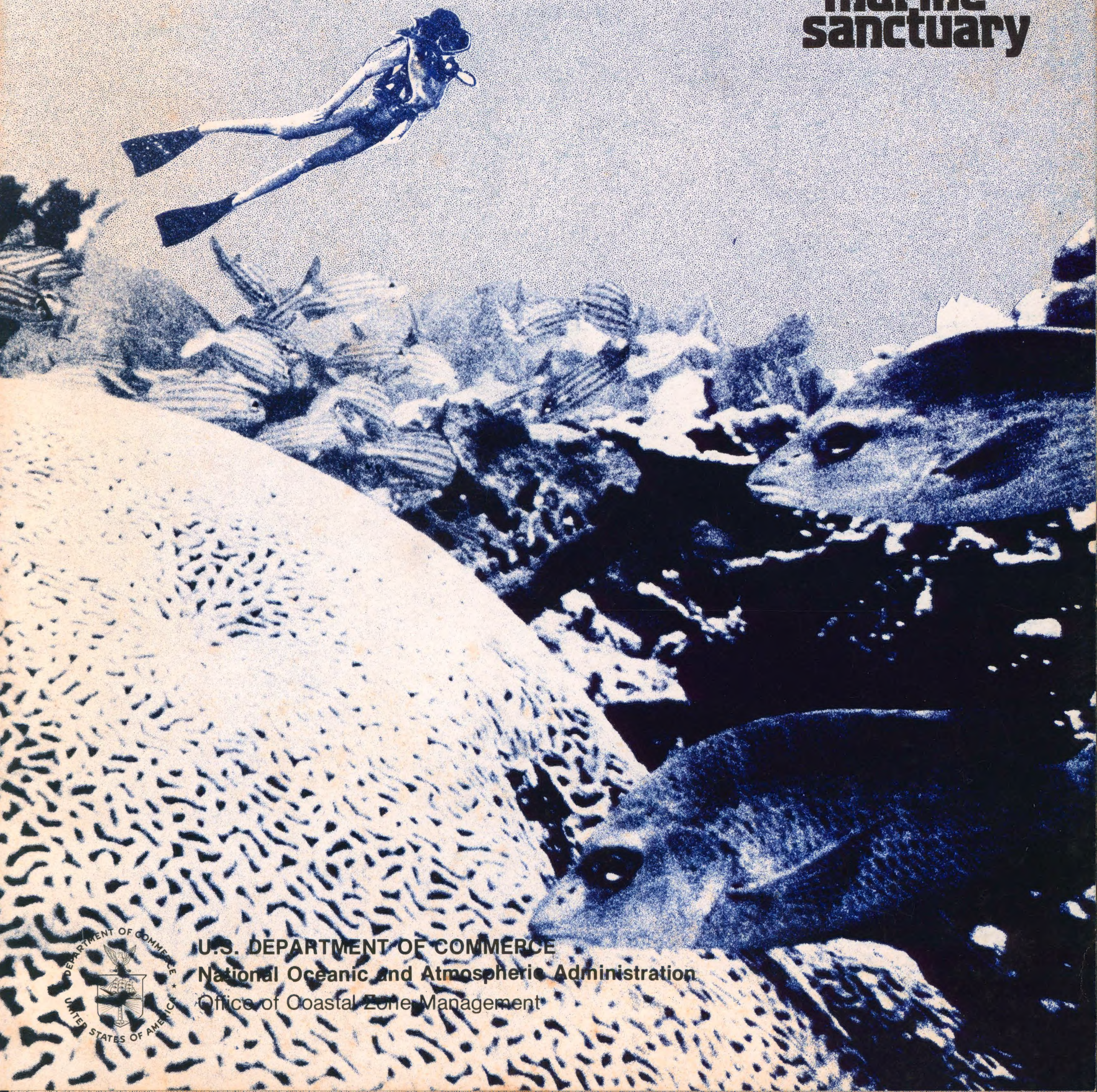
national marine sanctuaries program

Key Largo coral reef marine sanctuary



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management

national marine sanctuaries program

Key Largo coral reef marine sanctuary

Southeast of the Florida peninsula, where the Keys begin their extension into the Gulf of Mexico, lies one of nature's oldest and most artfully crafted underwater gardens: the Key Largo Coral Reef Marine Sanctuary. It encompasses 100 square miles and contains submerged coral architecture that rivals in structure and color the most variegated natural land formations.

The Sanctuary lies off Key Largo and extends from the three-mile offshore boundary of the adjacent John Pennekamp Coral Reef State Park to the 300-foot depth line, some 8 miles at sea. Its length stretches along 20 miles of clear tropical waters.

Without careful attention to the coral reef's environmental needs, however, its continued healthy existence could be threatened.

Accordingly, in 1975 the Key Largo Coral Reef was designated a marine sanctuary by the Federal government to safeguard its complex and fragile ecosystem.

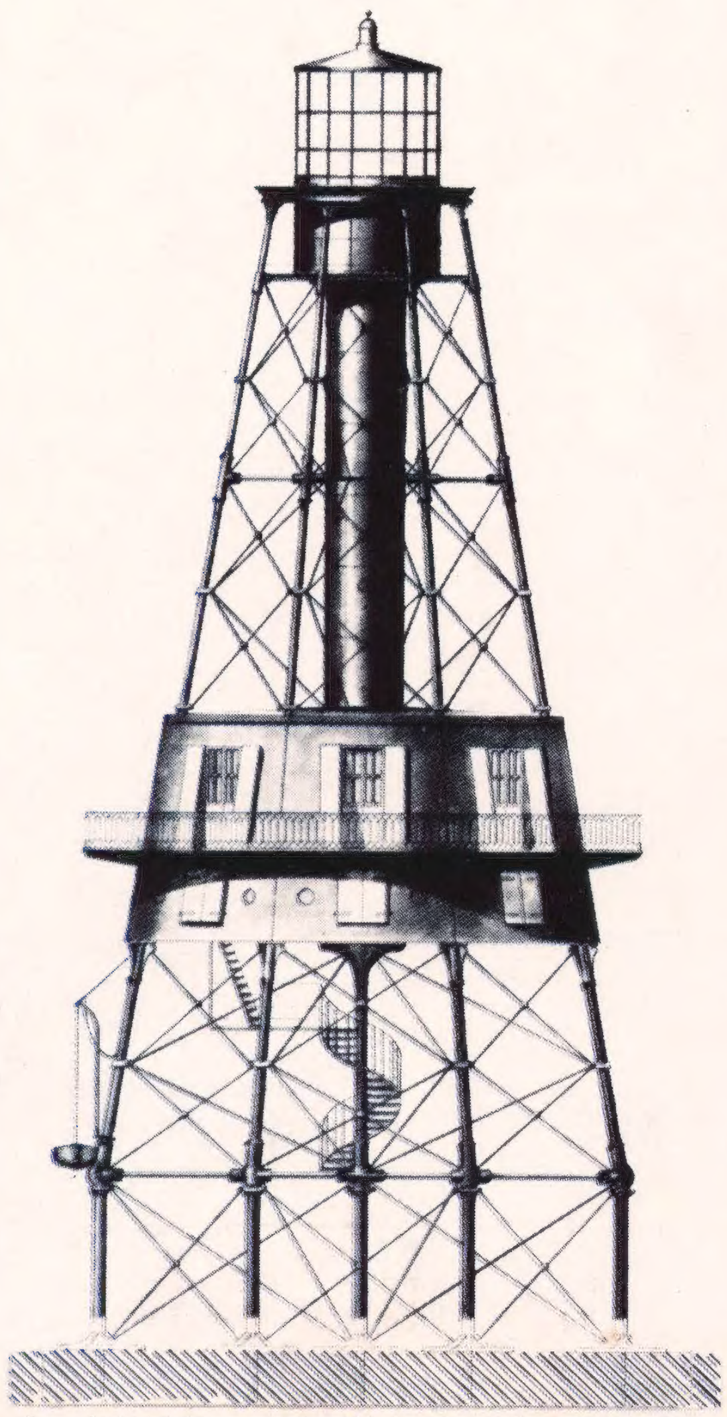
THE RESOURCE

The coral reefs at Key Largo are actually the skeletal deposit produced by billions of tiny coral polyps, invertebrate life forms that evolved during the Pleistocene period, thousands of years ago. The colonizing polyps have fashioned their skeletons into exquisite floral patterns, interspersed with giant boulders, jagged pillars, and spires, creating a magnificent submerged sculpture garden.

But the corals are not only beautiful, they are functional, as well. Coral reefs are vital building blocks in the marine ecosystem and prime benefactors to man. The coral reefs help cement the foundation of the Florida Keys and adjacent smaller islands and form a critical breakwater that diffuses the energy of storm-driven waves, muting the impact of hurricanes on the island chain and the mainland.

The coral reef is also a prime source of sand for Florida's glistening beaches. Scientists estimate that fish nibbling on corals and calcareous algae produce more than 2.5 tons of sand per acre annually. The intricate sculpture of the coral reef also provides a lush habitat for vast numbers of marine life. No fewer than 516 different species of fishes populate the reef, many of them of commercial or recreational value.

Tourism is crucial to the economy of the Keys, and the coral reefs are a main attraction for thousands of vacationers—more than 400,000 a year—who come for the abundant sport fish or spectacular snorkeling and scuba diving in the colorful and diverse marine ecosystem.



Carysfort Lighthouse, built 1852, located at Carysfort Reef

Finally, the Key Largo Coral Reef Marine Sanctuary offers a living research laboratory. Rarely are such varied species of fishes, crustaceans, mollusks, and other organisms clustered within such easy reach of marine scientists.

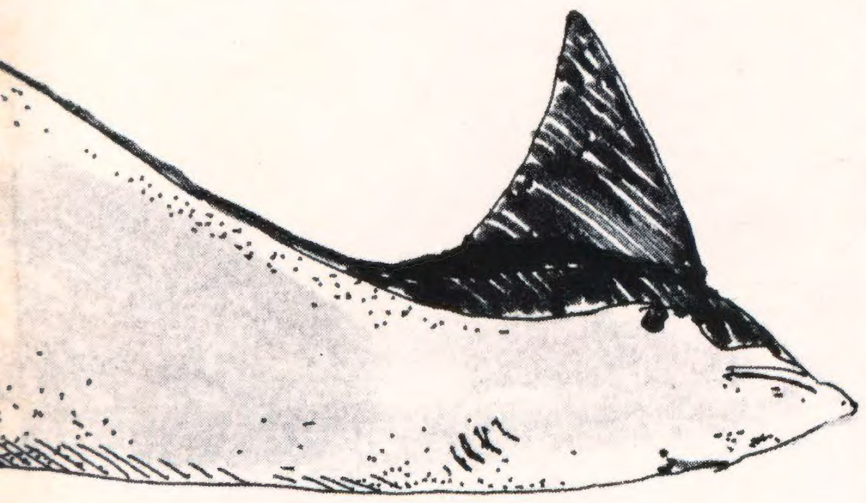
But while the life history of this underwater marvel suggests durability, the reef itself is a fragile and vulnerable structure that exists on the northernmost fringe of coral reef development. Coral reefs require considerable sunlight and, as a result, are rarely found at depths of more than 200 feet. Moreover, they require water temperatures that seldom drop below 68°F., and they are severely affected by shifts in the quality, salinity, and turbidity of their surrounding waters.

The fact that this reef—the largest off the North American continent—has survived millenia is largely a result of its unique location where open ocean circulation with warm Florida Current waters prevents mixing with colder, turbid, less saline Florida Bay waters. The scarcity of tidal passes through Key Largo further restricts mixing of these bay and ocean waters and tends to keep the coral reef's environment stable and healthy.

But coral reefs are subject to a host of natural predators, including fish that nibble at them, sponges that smother them, and mollusks, crustaceans, and other coral that compete for living space. Moreover, corals are very vulnerable to injury by divers. Studies show that when corals are under natural or human-related stress, even a small scrape from a diver's rubbing or standing on them is enough to cause the coral to be fatally infected by blue-green algae. In many cases, delicate coral branches are broken by fin kicks, by

divers standing on corals or grabbing them for support.

Within the Marine Sanctuary, scientists and managers are working to protect and preserve the coral reef ecosystem in its natural state. By regulating uses in the sanctuary, they can ensure the health and well-being of the coral and associated flora and fauna, and guarantee its continued esthetic and recreational appeal.



MANAGEMENT

Responsibility for management of the Marine Sanctuary lies with the National Oceanic and Atmospheric Administration's Office of Coastal Zone Management. A description of regulations for protecting the Marine Sanctuary is available at the gate of John Pennekamp Coral Reef State Park and at local dive shops. In general, NOAA regulations permit both sport and commercial fishing with hook and line. Spiny lobster and stone crabs may be taken with wood traps in accordance with plans outlined by the Regional Fishery Management Council.

Swimming, snorkeling, scuba and skin diving, photography, and recreational boating are encouraged. Important scientific research also takes place within the Marine Sanctuary.

A number of activities that would dangerously stress the living coral reef are prohibited, however. The rules prohibit the removal or destruction of any natural reef features or marine life (except for spiny lobsters and stone crabs) or other materials. A blanket prohibition is also in force against cutting, displacing, or breaking off bottom formation or growth. Dredging, filling, excavating, and building also are banned within the Marine Sanctuary, along with the discharge of refuse and other pollutants.

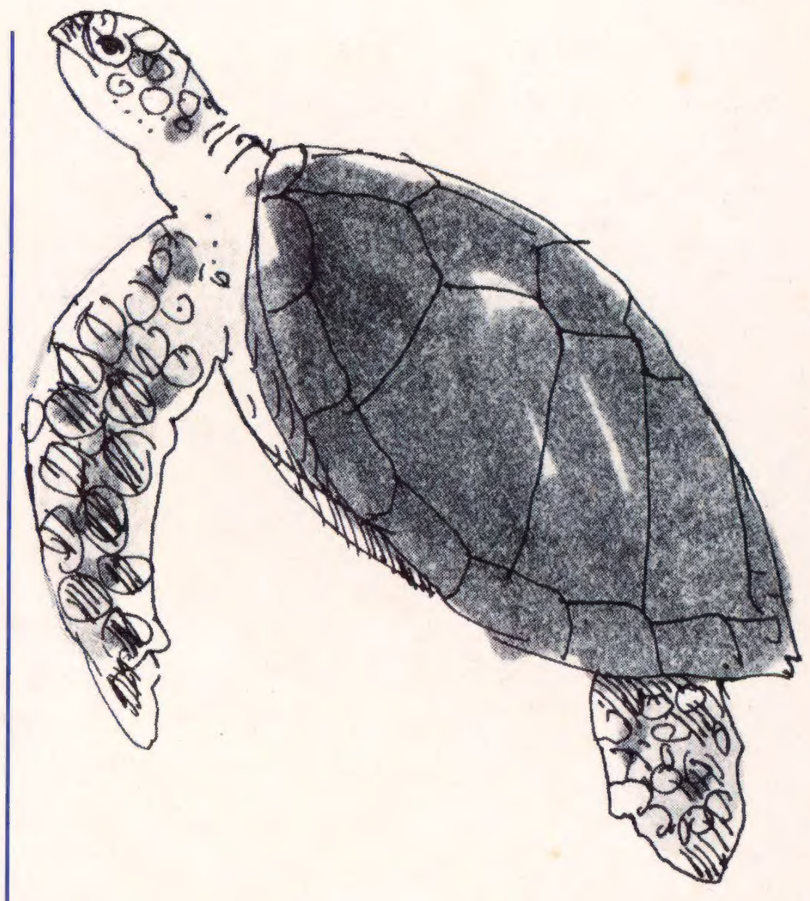
While hook-and-line fishing within the Sanctuary is allowed, tropical fishes—which offer scant sport or food value in any case—cannot be taken. Divers exploring the lush underwater scenery are forbidden to handle or stand on the coral formations.

Constraints have been placed on the operation of boats in the area to ensure that neither the watercraft nor their anchors damage any of the coral formations.

Up to 20 percent of the Marine Sanctuary area may be closed to the public by NOAA at any time to allow the living resources to recover from overuse or to provide for scientific research.

The regulations are enforced by the Florida Department of Natural Resources and the U.S. Coast Guard. Violators are subject to civil penalties of up to $50,000 under Federal law.

Management of the Marine Sanctuary requires periodic monitoring of the physical environment and assessment of the biological community. A geological study has been conducted



to determine the reef's past growth and to outline its geologic history. A number of other studies are planned for the future. These include water quality monitoring; permanent life history monitoring to study growth, recruitment, and other factors; biological inventories; and periodic assessments of coral mortality, disease, and anchor damage. Lobster and stone crab populations in the Marine Sanctuary will also be studied. In addition, deepwater surveys using submersibles are planned to identify

Christ of the Deep, located at Key Largo Dry Rocks

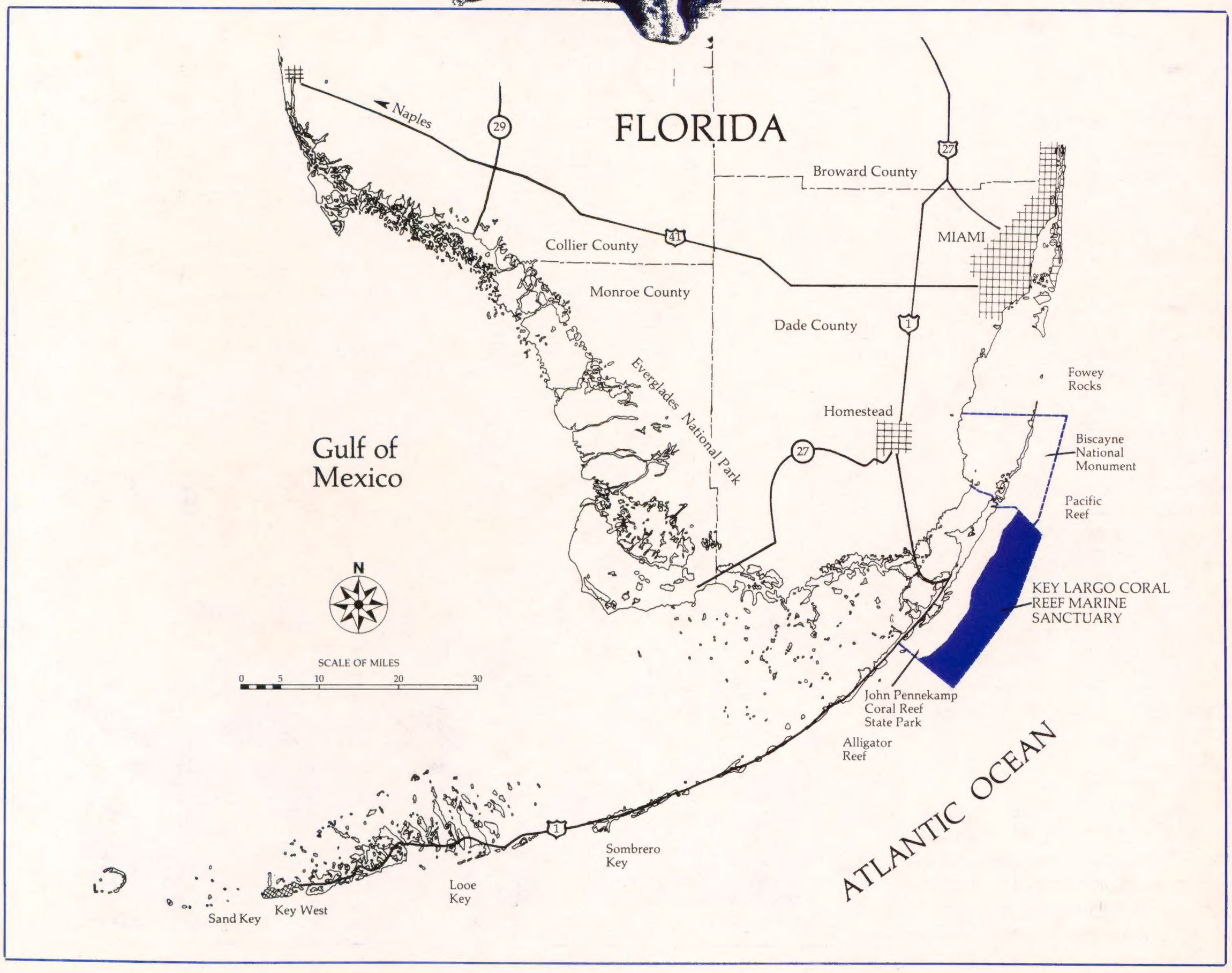
resources in Marine Sanctuary waters beyond the capacity of scuba divers.

NOAA has compiled a bibliography of published scientific research dealing with Marine Sanctuary waters and has published a management plan with resource maps that show in detail some of the different biological subzones to aid in management of the Sanctuary.

The designation and management of the Key Largo Coral Reef Marine Sanctuary reflects NOAA's commitment to preserve and protect the ocean environment from stresses related to human use.

Additional information about the Key Largo Coral Reef Marine Sanctuary can be obtained by writing to:

Associate Administrator
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
3300 Whitehaven Street, N.W.
Washington, D.C. 20235



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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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JUNE 1979